

**METHOD AND APPARATUS FOR THERMO-PLASTIC COMPOSITE WOOD****ABSTRACT OF THE DISCLOSURE**

**[0078]** A method of manufacturing a thermoplastic composite wood material. First, a first quantity of a first wood component of wood chips having long axes and a first size range is mixed with a second quantity of a second wood component of wood particles having a second size and a third quantity of a first thermoplastic polymer component of molten thermoplastic polymer until substantially all of the wood chips and the wood particles are encapsulated by the thermoplastic polymer. The second size range is distinct from the first size range and has substantially smaller values than the first size range. Next, the long axes of the wood chips of the first wood component are oriented such that they are substantially parallel to a predetermined plane. Next, a loose material constituting a mixture of the wood chips encapsulated in the thermoplastic polymer and the wood particles encapsulated in the thermoplastic polymer is deposited onto a press inlet feed unit while maintaining the orientation of the long axes of the wood chips. The loose material is then pressed in a direction substantially parallel to the predetermined plane such that it is compacted and such that the long axes of the wood chips are aligned substantially parallel to one another.